The metallic implantation technique seems to be a promising treatment for secondary osteochondral defects.

**Description**

*The HemiCAP® Contoured Articular Prosthetic* incorporates an articular resurfacing component and a cancellous taper post component that mates together via a taper interlock to provide stable and immobile fixation of the implant and stress bearing contact at the bone/prosthetic interface.

**Materials**

Articular Resurfacing Component: Cobalt-Chromium-Molybdenum alloy (Co-Cr-Mo)
Surface Coating: Titanium (CP Ti)
Taper Post: Titanium Alloy (Ti-6Al-4V)

**Indications For Use**

Partial resurfacing of the talar dome of the ankle for use in the treatment of patients with localized post-traumatic degenerative disease, necrosis associated with large unstable osteochondral fractures, or osteochondritis dessicans. Soft tissues and other structures contributing to joint stability should be intact or reconstructable. The intended use of the device is part of an interim clinical strategy for patients who have not responded to other treatments and who will likely receive a joint replacement or fusion in the future.

**Product**

(1) Cobalt Chrome Component
(2) Ti Plasma Spray Undercoating
(3) Titanium Fixation Component
- Morse Taper
- 15mm Diameter
- 10 Different Convexities with Asymmetrical Curvatures

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**Direction of the Oblique Medial Malleolar Osteotomy for Exposure of the Talus**

*Professor C. Niek van Dijk, University of Amsterdam*

A medial malleolar osteotomy is an established approach for the operative treatment of medial osteochondral defects of the talar dome and fractures of the talar body. Ray and Coughlin in 1947 first described a transverse osteotomy. Different techniques have been described since then, including inverted V, oblique, crescentic, step-cut, and inverted U osteotomy. The oblique osteotomy is an established technique that is used by many surgeons. There are various advantages, including the relatively simple technique, excellent exposure of the talus, preservation of the deltoid ligament, and optimal screw compression. This technique has been shown to provide reproducibly perpendicular access to medial talar lesions treated with osteochondral autograft transfer or metal implants.

Most surgeons agree that the osteotomy should be aimed at the intersection between the tibial plafond and the articular facet of the medial malleolus. Failure to exit at this point may lead to limited exposure (too medial), or violate the weight-bearing cartilage on the tibial plafond (too lateral). Concerns of the technique include the difficulty of reduction and potential for malunion because apposition may not be colinear with respect to the osteotomy cut. An incongruent joint surface after fixation could possibly lead to secondary osteoarthritis of the ankle joint. In order to obtain a congruent joint surface after fixation, the osteotomy cut is best directed perpendicularly to the articular surface of the tibia.

An osteotomy that is too vertical or too horizontal may result in an incongruent joint surface (i.e., step off) or shortening of the medial malleus after fixation. Furthermore, the fixation screws should be directed perpendicularly to the osteotomy plane. The longitudinal tibial axis can serve as an intraoperative reference to direct the medial malleolar osteotomy. This axis is commonly used for several orthopedic procedures, including total knee arthroplasty and high tibial osteotomy.

For additional information on the surgical approach please reference article:
Surgical Technique

1. Use Drill Guide to locate the axis normal to the articular surface and central to the defect. Place Guide Pin into a Cannulated Powered Drill and secure at the etch marking on the Guide Pin. Advance Guide Pin into bone, making sure that it is central to the defect. (It is important to verify the Drill Guide is seated on the curved surface such that four points of contact are established. A normal axis is necessary for proper implant fit.)

2. Place Cannulated Drill over Guide Pin and drive until the proximal shoulder of the Drill is flush with the articular surface. (Use lavage during drilling to prevent possible tissue damage from heat effects.)

3. Tap hole to etched depth mark on Tap.

4. Before inserting the Taper Post, thoroughly cleanse the pilot hole of any debris and then inject the cement in a retrograde fashion from the end of the hole upwards. Then place the Driver into the Taper Post and advance the Taper Post until the line on the Driver is flush with the cartilage surface.

5. Clean taper in Taper Post with Taper Cleaner. Place Trial Cap into Taper Post to confirm correct depth of Taper Post. The height of the Trial Cap must be flush or slightly below the existing articular cartilage surface to avoid the Articular Component from being placed proud or above the surface of the defect. Adjust depth if needed using the Driver to rotate the Taper Post (rotate clockwise to advance and counterclockwise to retract). Remove Trial Cap.

6. Place Centering Shaft into taper of Taper Post. Place Contact Probe over Centering Shaft and rotate around Centering Shaft. Read Contact Probe to obtain offsets at the 4 indexing points and mark each of the identified offsets on the appropriate Sizing Card. Select appropriate Surface Reamer using Sizing Card.
7. Remove Centering Shaft and replace with Guide Pin. Advance Circle Cutter onto the articular surface by twisting the Circle Cutter back and forth avoiding any bending of the Guide Pin.

8. Choose the appropriate Surface Reamer based on the offsets. Confirm selection by matching the color code on the Articular Component package with the colored band on the Surface Reamer shaft. Drive Surface Reamer over Guide Pin until it contacts the top surface on Taper Post. (Use lavage during drilling to prevent possible tissue damage from heat effects.) Make sure not to bend the Guide Pin during drilling as it may result in Articular Component malalignment.

9. Clean taper in Taper Post with Taper Cleaner. Place the Sizing Trial into the defect that matches the offset profile of the chosen HemiCAP® Articular Component. Confirm the fit of the Sizing Trial so that it is congruent with the edge of the surrounding articular surface or slightly recessed. If the Sizing Trial is proud at the edge of the articular cartilage, ream with the next appropriate sized reamer and use matching Sizing Trial. Sizing Trials must match Surface Reamer's offset size.

10. Before placing the Articular Component on the Implant Holder make sure that sufficient suction is present to hold the device on the distal suction cup. Align the Articular Component on the Implant Holder. Orient the etch marks on the back of the Articular Component with the etch mark on the handle of the Implant Holder. Align the Articular Component with the appropriate offsets. Insert into taper of Taper Post.

11. Use a slight tap on the Impactor to seat Articular Component. Progressively tap the Impactor until the Articular Component is firmly seated on the bone.

12. Final seated component.

Catalog Numbers

<table>
<thead>
<tr>
<th>Instruments</th>
<th>T000-1500</th>
<th>9007-1300</th>
<th>1304-1900</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Instrument Kit</td>
<td>2.0mm Guide Pin, Sterile</td>
<td>Taper Cleaner &amp; Trial Cap</td>
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</tbody>
</table>

| Talus Articular Component | T152-0530 | 0.5mm x 3.0mm Offset | T152-0535 | 0.5mm x 3.5mm Offset | T152-0540 | 0.5mm x 4.0mm Offset | T152-0545 | 0.5mm x 4.5mm Offset | T152-1030 | 1.0mm x 3.0mm Offset | T152-1035 | 1.0mm x 3.5mm Offset | T152-1040 | 1.0mm x 4.0mm Offset | T152-1535 | 1.5mm x 3.5mm Offset | T152-1545 | 1.5mm x 4.0mm Offset | T152-2040 | 2.0mm x 4.0mm Offset |
Instrumentation

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This product is covered by one or more of U.S. Patent Nos. 6,520,964; 6,618,867; 6,679,517 and other patents pending.

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